in the State of California as taught in chiropractic schools or colleges; and, also, to use all necessary mechanical, and hygienic and sanitary measures incident to the care of the body, but shall not authorize the practice of medicine, surgery, osteopathy, dentistry or optometry, nor the use of any drug or medicine now or hereafter included in materia medica.

Much testimony has been introduced and the matter ably and fully argued and briefed by respective counsel.

The District Court of Appeal, in the case of *Evans* vs. *McGranaghan,* said in part:

It contains no definition of "Chiropractic as taught in chiropractic schools or colleges. . . ."

Also,

The intent of the statute is clear upon its face: that the license shall authorize the holder to practice chiropractic as taught in chiropractic schools or colleges. But the court has no way of determining the scope of chiropractic as taught in such schools and colleges in the absence of evidence on that subject, and hence a resort to such evidence would be proper.

After a careful analysis of the testimony, the arguments and authorities cited, I am of the opinion that "chiropractic as taught in chiropractic schools or colleges" means the practice of chiropractic as such, irrespective of the subjects embraced in the curriculum, such as minor surgery, obstetrics, replacing shoulder, hip, rib and foot subluxations and dislocations, etc., which I am of the opinion are embraced in the field of medicine or surgery, and not a part of chiropractic. As counsel for one of the intervenors aptly states: "It may be that a student in dentistry would embrace in his curriculum the study of anatomy, but this would not justify him in practicing either surgery or medicine."

I am further of the opinion that under Section 7 of the Act a chiropractor would have no right to do any of the enumerated things in Sections 8 and 17 of the Medical Practice Act, nor the right to treat the eye, ear, nose, and throat; although I am not of the opinion that a manipulation of the vertebrae of the spine would be included in the word "surgery" as contemplated in the Medical Act, nor can I see under the provisions of this Act where a chiropractor has the legal right as such to practice osteopathy as defined in the cases of *Harlan* vs. *Alderson,* 55 Cal. App. 263, and *In re Rust,* 181 Cal. 73. I am, likewise, of the opinion that under Section 11 of the Dental Laws of the State of California, a chiropractor has no legal right to perform an operation on the teeth of a patient, or "treat diseases or lesions of the human teeth, alveolar process, gums or jaws or correct malimposed positions thereof, or construct, alter, repair or sell any bridge, crown, denture or other prosthetic appliance or orthodontic appliance."

Chapter 598 of the Statutes of 1913 definitely defines "optometry," and I cannot see how it in any manner or form can be included in the term "chiropractic" either in the treatment of the eye or in the use of either lenses, or frames, permanently or temporarily.

I am not in accord with the position assumed by the plaintiff herein as to the unconstitutionality of the words "materia medica," for they have a well-defined and recognized meaning, and have been frequently used by the courts of this state, and consequently I hold that the chiropractor has no right to administer or prescribe drugs or medicines.

I am further of the opinion that the words "all necessary mechanical, and hygienic and sanitary measures" would include the use of the x-ray for the purpose of analysis or diagnosis of the physical condition of the patient, but not for the purpose of treating disease or illness. The same is true as to the stethoscope, neurocalometer, and kindred modalities which might properly be used for diagnostic purposes.

Such appliances or agencies as the chiropractic table, chiropractic hammer, and towels and other instrumentalities as are purely sanitary do not violate the statute, but the use of the various therapeutic agencies such as electrotherapy, hydrotherapy, colonic therapy, etc., are embraced in the practice of medicine and, therefore, forbidden to chiropractors.

JOHN J. VAN NOSTRAND,
Judge of the Superior Court.

Dated September 28, 1936.

THE LURE OF MEDICAL HISTORY†

THE HUNTERS IN EMBRYOLOGY*

By A. W. MEYER, M.D.
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I**

THE famous Scotchmen, John and William Hunter, have always occupied a prominent place in the history of medicine, and deservedly so. William also has usually been given a place in the history of embryology almost wholly denied John. Yet Duncan,[1] who championed William in his well-known volume, declared in the Harveian address of 1876 that William "left behind him scarcely anything to perpetuate his memory, except the work on the Gravid Uterus, which, though undoubtedly of great merit, has had no very extensive influence on the progress of knowledge, and cannot in any way be compared with what has been effected by his brother." (p. 1077.)‡ However, Rádl,[2] in his *Geschichte der biologischen Theorien,* barely mentioned John, merely listing him among some other comparative anatomists, and Bilikiewicz[3] only mentioned John in a footnote, although he used the name of his brother for a subtitle. Nordenskiöld,[4] however, gave John, instead of William, a place in his History of Biology. He pointed especially to John's treatise on teeth and to his ideas regarding the blood and his comparative anatomical work. Needham,[5] on the other hand, mentioned both William and John in his History of Embryology, referring to the former as an embryologic iconographer, and especially emphasized John's connection with the idea of recapitulation.

It is not surprising that the unexcelled and sumptuous "elephant" folio on the gravid uterus,[6] for the "elaborateness" of which the author felt it necessary to apologize, attracted great attention at the time of its appearance in 1774, and that it has been extolled very often since that day. It will be recalled that this atlas on human pregnancy is

†A Twenty-Five Years Ago column, made up of excerpts from the official journal of the California Medical Association of twenty-five years ago, is printed in each issue of CALIFORNIA AND WESTERN MEDICINE. The column is one of the regular features of the Miscellany department, and its page number will be found on the front cover.

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** This paper will appear in three parts.

‡ This opinion of Duncan's is substantiated by the fact that such an outstanding embryologist as Charles Sedgwick Minot did not refer to the Hunters in his discussion of the Decidua in the Reference Handbook of the Medical Sciences by Buck, 1894.

1 Duncan, J. Matthews: On the life of William Hunter: The Harveian address, April 13, 1876. Edinburg Medical Journal, 21 (Pt. 2), 1061-1079, 1876.

2 Rádl, Em.: Geschichte der biologischen Theorien seit dem Ende des siebzehnten Jahrhunderts. I. Teil. Leipzig, 1905.

3 Bilikiewicz, Tadeusz: Die Embryologie im Zeitalter des Barock und des Rokoko. Leipzig, 1932. (Arbeiten des Instituts für Geschichte der Medizin an der Universität Leipzig, Band 2.)

4 Nordenskiöld, Eric: The history of biology. Translated from the Swedish by Leonard Bucknall Eyre. New York, 1928.

5 Needham, Joseph: A history of embryology. Cambridge, 1934.

6 Hunter, William: Anatomia uteri humani gravida tabulis illustrata (Anatomy of the human gravid uterus exhibited in figures). Birmingham, 1774.

composed of thirty-four excellent, large plates, 47 by 64 centimeters, the work of accomplished artists, and of engravers supervised by Robert Strange, who himself executed two of the plates, causing Hunter to say that Strange had thereby "secured a sort of immortality" for the plates. This atlas is characterized quite adequately by Choulant,[7] and also was commented upon with great appreciation by von Siebold[8] in his *Geschichte der Geburtshülfe*.

WILLIAM HUNTER'S DISSECTIONS

William, who was famed as an obstetrician, apparently had dissected mammals late in gestation in order to enlarge his knowledge of the subject, and said that he projected the above volume when he

> met with the first favourable opportunity in 1751 of examining, in the human species, what before he had been studying in brutes. A woman died suddenly, when very near the end of pregnancy, the body was procured before any sensible putrefaction had begun, the season of the year was favourable to dissection.

With "the assistance of many friends," he was able to secure twelve more bodies in a similar state, in the preparation of which, for the artists, John played an important part. William expressed his indebtedness to John in the last paragraph of the preface to his treatise on the gravid uterus, for his skill in dissection. The latter's share in the production of it hence received public recognition from the time of the appearance of this treatise, twenty-six years after he joined William, even if not from the very beginning of the undertaking.

In the Gravid Uterus, William said that he expected to publish an additional plate representing "a younger human embryo than he had seen heretofore, and also a tubal pregnancy which he had drawn," and he added that if he "should be prevented from doing this by any unforeseen accident," it would be "in the power of many gentlemen of the profession to do it" for him, because he had "constantly explained his observations on this subject in his public lectures." He apparently never found the leisure for doing these things and his professional friends apparently failed him, for according to Teacher[9] (1900), "He never carried out this scheme, and there is no detailed description of either of these cases, nor sketches of the embryo in the museum. The embryo and placenta from the extra-uterine case are the original of the illustration in Quain's *Anatomy* 'after Allen Thomson,' tenth edition, vol. i, pt. i, p. 104, fig. 124. Professor Thomson sketched it for the seventh edition, 1867, in which it appeared as Fig. 603." (pp. lix-lx.) According to this, then, the drawing did not appear in the posthumous volume on the uterus which appeared in 1794.

THE NAME, DECIDUA

According to Teacher (p. lii), William invented the name decidua for the spongy chorion, and believed (p. liv) in 1775 that the placenta " 'is partly made up of an excrescence from the uterus itself . . . the internal membrane of the uterus, which I have named decidua, constitutes the exterior part of the secundines, or after-birth . . .' " Moreover, from the text accompanying Plate 34 of the Gravid Uterus, which appeared in 1774, it is evident that William regarded the decidua itself as a conception, which also indicates that he regarded it as a growth. He had a correct idea of the gross relations of the chorionic vesicle to the decidua, and the decidua externa (vera) and reflexa long were known as the Hunterian membranes. However, as far as I have been able to learn, he did not use the term serotina, as von Siebold[8] (1902) said, but spoke of a lamella externa instead. Webster[10] (1901) said that John named the decidua serotina and plainly implied that it also was he who named the reflexa, while Williams[11] (1903), on the other hand, wrote: "The terms reflexa and serotina date from the time of William Hunter, who gave excellent drawings of the decidual membrane in his atlas. Unfortunately, the author died just after its appearance and before the completion of the explanatory text, which was prepared by John Hunter and Matthew Baillie . . ." (p. 106), and he attributed John's idea of the formation of the decidua to William. This statement was partly corrected in a later edition[12] (1931), but not without the introduction of other errors, as the following quotation shows:

> The terms *reflexa* and *serotina* date from the time of William Hunter, who gave excellent drawings of the decidual membrane in his atlas. Unfortunately, the explanatory text was prepared by John Hunter and Matthew Baillie, who considered that the decidua represented a fibrinous exudate from the lining membrane of the uterus, which not only formed a complete cast of its cavity, but also covered the tubal openings. They supposed, therefore, that when the ovum reached the uterine end of the tube its further passage was opposed by the decidua vera, which it was obliged to push before it as it entered the uterus, whence the term *reflexa*; consequently, after the latter had been pushed forward, a new exudate was developed behind the ovum, to which the term *serotina* (late) was applied (Figs. 140 and 141). (pp. 137-138.)

The figures referred to are "Diagrams Illustrating Hunterian Theory of Formation of Decidua Reflexa," after the manner of Carpenter[13] (1845), page 601.

It is perplexing that an anonymous auditor[14] of William Hunter's lectures stated (p. 85) that William said he first called the decidua "Caduca,"

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7 Choulant, Ludwig: Geschichte und Bibliographie der anatomischen Abbildung nach ihrer Beziehung auf anatomische Wissenschaft und bildende Kunst. Leipzig, 1852.

8 Von Siebold, Ed. Casp. Jac.: Versuch einer Geschichte der Geburtschülfe. Zweite Auflage. Zweiter Band. Tübingen, 1902.

9 Teacher, John H.: The anatomical and pathological preparations of Dr. William Hunter. Introduction. Glasgow, 1900.

10 Webster, J. Clarence: Human placentation. Chicago, 1901.

11 Williams, J. Whitridge: Obstetrics. New York and London, 1903.

12 ——: Same. Sixth enlarged and revised edition. New York and London, 1931.

13 Carpenter, William B.: Principles of human physiology. Second American, from the last London edition. With notes and additions by Meredith Clymer. Philadelphia, 1845.

14 Anonymous: A treatise on midwifery, as given by the late Dr. William Hunter in his lectures; with a description and representation of the uterus and its contents, in the different stages of pregnancy. Also the treatment of women in time of labour, etc. (undated MS. notes occupying pp. 71-181 of volume with cover title, "Ray on Teeth. Hunter. Gravid Uterus.").

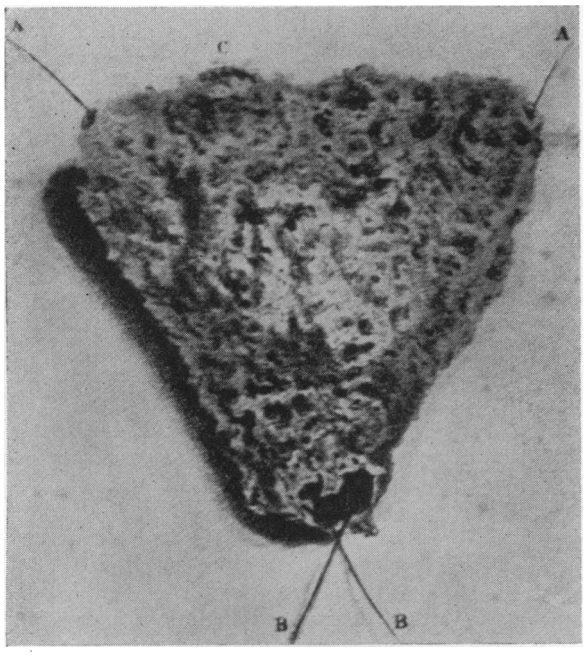

Fig. 1.—Figure 5 of Plate 34, after the Atlas of 1774.

but changed it to decidua when he found that it was temporary. According to this auditor (p. 99), William also declared in his lectures that

> The decidua in the early months lines the uterus loosely with it, [.] at [At] the edges of the placenta. [,] It [it] divides into 2 strata, one of these runs under the placenta, between it & the uterus, & the other is reflected over the membranes. The last is called the decidua reflexa.

It should be noted that this statement is in complete accord with that written by William and contained in the explanatory text accompanying the tables of the Gravid Uterus. A good statement regarding this matter is found in Fasbender,[15] who, however, attributed John's idea of the formation of the decidua to William, perhaps because as Duncan[16] (1868) said:

> In 1780, . . . John Hunter inaugurated the errors in regard to the decidua which have been finally overthrown only in our own time and which still maintain a lingering existence in obstetric literature. (p. 230.)

Fasbender called attention to the fact that Vesalius and Fabricius had represented the decidua, and that this was done also by Noortwyk, who thought that it formed part of the chorion (substantia fungiosa chorii), an opinion held even by Baudelocque (1746-1810), according to Meckel (I, p. 306, quoted by and from Fasbender). Meckel said that Baudelocque rejected the idea of certain anatomists who regarded the decidua as a separate membrane.

In the legend to Figure 5, Platè 34, which is a good representation of a decidual cast, William spoke of AA as representing

> A bristle passed through the cavity of the conception, through a hole at each of the upper angles, which was supposed to be the termination of the fallopian tube. BB. The same bristles coming out through a large hole at the lower angle, supposed to be opposite to the cervix uteri. C. A small hydatide, supposed projecting through the surface of the decidua, which had slender branching filaments shooting from the surface, supposed to be the chorion."

As indicated by the drawing, the hydatid mentioned by William no doubt was a chorionic vesicle, as he thought, and apparently was devoid of an embryo and probably also of an amnion and a yolk sac. The "slender branching filaments shooting from the surface" manifestly were "magma reticule," often so abundant in conceptuses retained after their death.

(To be continued)

15 Fasbender, Heinrich: Geschichte der Geburtshülfe. Jena, 1906.

16 Duncan, J. Matthews: Notes on the history of the mucous membrane of the body of the uterus. William and John Hunter. In Researches in Obstetrics, Chapter 6, pp. 222-242. Edinburgh, 1868.

Conversational Gems of Dr. J. P. Widney*

Founder of the Los Angeles County Medical Association: At Age of Ninety-Five Still Active in Literary and Church Work

I learned early in life to have my umbrella handy for a rainy day.

You never reform a man by throwing stones at him.

The jail is the product of civilization—the savage settles it with a club.

There is something wrong with the religion that turns out intolerance as its fruit.

The world today is mentally epileptic.

The world likes enthusiasm. Confidence in yourself is half the battle.

Never separate the old and the young. They need each other.

Incompetent to lead—unwilling to follow.

I do not need to interfere with every dog fight in the street.

The Lord said: "I will curse the ground for your sake." You will then no longer lie in the hammock, but will be out cutting down the weeds and thistles.

Rome tried two generals to an army—it did not work.

It's the mind that keeps the body alive.

The mass of the people are where they are because they are what they are.

A political party is like a business house—it must have something to sell.

The mole never sees the sun.

The porcupine wondered why no one would be neighborly with him.

Above all things, do not make medicine a part of your diet.

As I could not get new eyes, I bought a new Bible.

Don't waste your life dying before your time has come.

A thing that is to be understood is apt to be misunderstood.

Heaven is where there is a clear conscience.

The whole world is struggling to get something for which it does not pay.

There is a great amount of so-called religious training that does not increase moral fiber.

A kindly, sweet-spirited sinner is of more worth in the uplift of the world than a soured "saint."

The old-fashioned book store, like the old-fashioned drug store, is a thing of the past.

Home is a personality.

No amount of financial juggling can create money.

Borrowing more money has never yet settled a debt.

The ultimate standard of valuation is production.

He was aiming at nothing, and hit it.

Some people have no bread but they have automobiles.

In world matters we are apt to mistake the foam for the river.

Spain is not Europe. It is Africa.

The time for poulticing in politics has gone by. It is now time for the lancet.

(To be continued)

* Compiled by Rebecca Davis Macartney.
Previous excerpts from the Macartney compilation were printed in the July issue (page 61), August issue (page 171), September issue (page 278), and October issue (page 355).